UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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August 13, 2013

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

SUBJECT: **Draft Environmental Impact Statement for Hydropower Licenses for the Martin Dam Hydroelectric Project (FERC Project No. P-349-173) located on the Tallapoosa River in Tallapoosa, Coosa, and Elmore Counties, Alabama CEQ# 20130163**

Dear Secretary Bose:

The U.S. Environmental Protection Agency (EPA) has reviewed the referenced Draft Environmental Impact Statement (DEIS) in accordance with its responsibilities under Section 309 of the Clean Air Act and Section 102(2)(C) of the National Environmental Policy Act (NEPA). The Federal Energy Regulatory Commission (FERC) proposes to approve a new license for the Martin Dam Hydroelectric Project, FERC Project No. 349-173. The Martin Dam Project is located on the Tallapoosa River in Tallapoosa, Coosa, and Elmore Counties, Alabama. The Martin Dam Project is owned by Alabama Power Company (APC). The current license expired on June 9, 2013. On June 8, 2011, APC filed an application with FERC to relicense the existing Martin Dam Hydroelectric Project.

Project Background

EPA recently reviewed the DEIS for the Update to the Water Control Manual (WCM) for the Alabama-Coosa-Tallapoosa (ACT) River Basin. The WCM describes how federal projects within the basin should operate in order to meet their authorized purposes. The Martin Dam Project is a non-federal project located within the ACT River Basin and described in the WCM DEIS as having 48.7% of the conservation storage of the entire basin.[1] Therefore, the Martin Dam Project controls a significant portion of the flows in the Tallapoosa River and the overall ACT River Basin.

The Martin Dam Project has an installed capacity of 182.5 megawatts (MW) and occupies 1.39 acres of federal lands. The existing project consists of: (1) the Lake Martin reservoir, with a surface area of 40,000 acres at a normal full pool elevation of 491 feet mean sea level (msl); (2) a 2,000-foot-long concrete gravity dam and earth dike section that includes (a) a 720-foot-long gated spillway section with twenty, 30-foot-long by 16-foot-high vertical lift spillway gates, (b) a 280-foot-long concrete gravity intake structure, (c) a 255-foot-long concrete gravity non-overflow section on the right abutment, and (d) an approximately 1,000-foot-long earth

[1] USACE - DEIS for ACT Water Control Manual Update (March 2013)

embankment on the left abutment; (3) headworks containing four steel penstocks and 12, 9-foot-wide by 24-foot-high intake gates fitted with trashracks; (4) a 307-foot-long, 58-foot-wide, and 99-foot-high brick and concrete, steel-frame powerhouse; (5) four vertical Francis turbines that power four generating units, with installed capacities of 45.8 MW, 41.0 MW, 40.5 MW, and 55.2 MW, for a total installed capacity of 182.5 MW; (6) two, 450-foot-long transmission lines leading from the powerhouse to the Martin switchyard; and (7) appurtenant facilities. The project generates about 375,614 megawatt-hours (MWh) per year.

Under the existing license, the Martin Dam Project operates as a peaking project and typically operates to maintain elevations in Lake Martin between the bounds of a flood control curve and an operating curve. Water levels in Lake Martin fluctuate by as much as 11 feet between elevations 480 and 491 feet msl. FERC indicates that the Martin Dam Project benefits are hydroelectric power; limited seasonal flood control during the winter when the reservoir is in drawdown condition; recreation, municipal, and industrial water supply; aquatic flow maintenance; and navigation flow support.[2]

Alternatives

Three alternatives were evaluated in the DEIS:

1) Alternative 1 - APC's proposal which includes continuing to operate the project in a peaking mode; with the following modifications to project operation: (1) to help ensure that Lake Martin reaches its summer pool level by the end of May each year, raise the winter flood pool by 3 feet, and raise the operating curve and drought curve proportionately during the same timeframe; (2) to help minimize downstream flooding, revise operation for flood control by reducing outflow from Martin dam during certain conditions when the reservoir elevation is decreasing; (3) to provide higher reservoir levels for recreation during the fall, implement a conditional fall extension of the flood control curve to elevation 491 feet from September 1 to October 15; and (4) to facilitate seawall and boat dock maintenance, and/or construction, upon FERC approval of the proposed 3-foot increase of the winter pool elevation, lower the reservoir elevation during the winter months to 481 feet every 6 years. In addition, APC proposes measures for operation during low flow or drought conditions.

2) Alternative 2 - The no action alternative (continued operation as required by the existing licenses)

3) Alternative 3 - FERC staff-recommended alternative, which includes existing operations and most of APC's proposed environmental measures with some staff modifications. This alternative is identified as the FERC preferred alternative in the DEIS.[3]

[2] p. xiii of Martin Dam DEIS
[3] p. xiv thru xv of Martin Dam DEIS

EPA Comments

Water Quality Standards

State water quality standards programs include designated uses, criteria to protect those uses, and an antidegradation policy (CWA Section 303(c); 40 CFR § 131). Section 401 of the CWA additionally protects these water quality standards, requiring state certification that federal activities which may result in any discharge will comply with state water quality standards. Further, Section 404(b)(1) Guidelines state that no such work shall be permitted if it would cause or contribute to "violations of any applicable State water quality standard" (40 CFR § 230.10(b)(1)), or if it would "cause or contribute to significant degradation of the waters of the United States" (40 CFR § 230.10(c)).

The Alabama Department of Environmental Management (ADEM) issued the 401 Water Quality Certification (WQC) for the Martin Dam Project on May 9, 2011 with conditions based on APC's proposed operations described in their FERC application. ADEM provided the following conditions within the 401 WQC:

- monitor the Martin dam tailrace for DO and temperature during generation at 30-minute intervals from June 1 to October 31 for a period of 3 years;
- provide DO and temperature monitoring reports to ADEM within 90 days of the end of the annual monitoring; and
- if monitoring does not show compliance with the 4.0 mg/L DO standards, Alabama Power would be required to implement measures to ensure compliance.[4]

EPA Comment / Recommendation - The Alabama water quality standard for DO is a daily dissolved oxygen concentration of not less than 5 mg/l. However, the WQS states,"[i]n no event shall the dissolved oxygen level be less than 4.0 mg/l due to hydroelectric turbine discharges from existing hydroelectric generation impoundments.[5]" In a June 29, 2009, response to public comments for the State Triennial Review of WQS, ADEM clarified the hydroelectric generation portion of the state water quality standards:

> "The Department interprets the provisions for dissolved oxygen criteria at 335-6-10-.09 regarding hydroelectric impoundments to mean that during periods when there is no discharge from the impoundment the applicable dissolved oxygen criterion is 5.0 mg/l in waters with the Public Water Supply and Fish and Wildlife designated uses. The applicable dissolved oxygen criterion during periods when the impoundment is discharging is 4.0 mg/l. These values do not indicate an instantaneous transition from one dissolved oxygen criterion to the next after the start or stop of impoundment discharge."

The conditions regarding monitoring and ensuring compliance with the State WQS should more accurately follow ADEM's clarification. Specifically, the monitoring location should be clearly noted and monitoring data should be clearly identified as to when it is being collected – either

[4] p. 70-71 of Martin Dam DEIS

[5] ADEM WQS Chapter 335-6-10-.09 Specific Water Quality Criteria, (5) Fish and Wildlife, (e) Specific criteria, 4. Dissolved Oxygen

during generation of power or when power is not being generated, so that it can be compared for compliance with the applicable criteria.

ADEM's standard continues by adding, "[t]he Environmental Protection Agency, in cooperation with the State of Alabama and parties responsible for impoundments, shall develop a program to improve the design of existing facilities." Reissuance of a FERC license would be one of the most opportune times to consider an evaluation of improving the design of existing facilities as contemplated by the standards. However, no mention is made of this provision. Based on the existing water quality standard for DO, EPA recommends the FEIS provide additional details on what programs and design changes have been made over the life of the previous FERC license for the Martin Dam project to meet this goal of the existing standard.

EPA supports the three years of DO monitoring proposed in the WQC, but is concerned that the monitoring proposed may not be adequate to capture non-compliance events of the 4.0 mg/L DO standard. The new FERC license may be issued for a 50 year period, and EPA is concerned that the monitoring proposed in the WQC may not capture future low flow events resulting from droughts that could cause or contribute to non-compliance events of the DO standard. In addition to the required three years of monitoring proposed in the state WQC, EPA supports the recommendation that additional DO monitoring be included and that, in particular, all future low-flow events be monitored when the potential for non-compliance of the DO standard is high. In addition, EPA recommends that FERC and or APC provide additional clarification in the FEIS on what additional measures (or adaptive management) that would be implemented to ensure compliance with the DO standard in the event the standard is not met. Lastly, EPA request that FERC provide clarification in the FEIS regarding how far downstream from the project the 4.0 mg/L DO WQS applies.

Instream Flow

Since the date of the last Martin Dam Project license issuance, and even since the date of the initial scoping for this EIS, the science related to instream flows has evolved significantly. The re-issuance of the license for the Martin Dam Project provides an opportunity to incorporate the latest science and successful practices for regulating flows to improve water quality, meet designated uses and, where possible, restore the hydrologic condition and ecological integrity of the river system.

Aquatic plant and animal species have evolved life cycle patterns directly tied to the primary components of hydrologic variability: frequency, magnitude, duration, timing and rate of change of natural flows. Every aspect of the lives of aquatic plants and animals is cued by and inextricably linked to the natural variability of our rivers and streams, which is often absent in highly regulated systems.

EPA Comment / Recommendation - The understanding of how to adapt dam operations to improve both recreational uses and protect for aquatic life has evolved significantly. In Richter's "Restoring Environmental Flows by Modifying Dam Operations,[6]" it is stated that there is "...tremendous opportunity... for modifying the operations of existing dams to recover many of the environmental and social benefits of healthy ecosystems that have been compromised by

[6] Richter, et al (2007)

present modes of dam operation." Yet, the DEIS includes almost no improvements on the operation of the dams for sustainable flows. This is a serious deficit of the DEIS. It might be suggested that this license does not need flow modifications because the flows released from Martin Dam go directly into the Yates impoundment[7] and then into the Thurlow development. Both of these FERC licenses were issued in 1994 and expire in 2034. However, Yates and Thurlow developments "operate as run-of-river, with limited re-regulating capacity for the peaking releases from Martin dam, thus flows downstream of Yates and Thurlow largely reflect the releases from Martin Dam." Downstream of Thurlow Dam the Tallapoosa River flows 49.7 miles before reaching the confluence with the Coosa River to form the Alabama River. The opportunity to affect such a significant length of river segment should not be missed by not including an evaluation on improving instream flows.

EPA encourages incorporation of variable flows in the Martin Dam Project license, including the seasonal, intra-annual and inter-annual variable flow patterns needed to maintain or restore processes that sustain natural riverine characteristics. Naturally variable flows are also a major determinant of physical habitat in streams and rivers and directly affect biological composition. The DEIS states that the 1994 licenses for the Yates and Thurlow project, requires Alabama Power to provide a continuous 1,200 cfs minimum flow release from the Thurlow powerhouse and that the "minimum flow protects aquatic resources including water quality and aquatic habitat in the downstream riverine reach."[8] These statements, which are used to support the Martin Dam operation, do not reflect the current scientific understanding that flows across the range of the natural hydrograph are important for maintaining the structure and function of aquatic ecosystems rather than regulating a river to meet a static low flow target.

Hydroelectric dams that have extreme daily fluctuations in flow and a high rate of change between high and low flows "have no natural analogue in freshwater systems and represent an extremely harsh environment of frequent, unpredictable flow disturbance.[9]" Modifying flow regimes provides an opportunity to positively alter habitat and influence species diversity, distribution and abundance. Therefore, EPA recommends that, where possible, the Martin Dam Project license be issued in a manner to mimic the natural conditions as closely as possible in the downstream waters. As recommended in our NEPA comment letter on the ACT WCM dated May 31, 2013, EPA suggests the use of multiple endpoints to demonstrate the protection of aquatic life designated uses. Relevant endpoints include floodplain connectivity (inundation, maintenance of off-channel habitats, wetted perimeter, out-of-bank habitats) and habitat suitability analysis.

EPA strongly recommends that the FEIS be revised to examine improvement to instream flows. The FERC has now worked successfully on the incorporation of instream flow improvements into other license renewals, such as on the Saluda in South Carolina, that could be used as a reference. These have included provisions to stabilize extreme lake fluctuations and to provide benefits to both the recreational uses of the lakes while also supporting downstream flows. As well, the USACE has successfully incorporated improvements that have resulted in both an economic as well as ecological benefit, such as the Green River in Kentucky – part of the

[7] Martin Dam DEIS, Pg. 16
[8] Martin Dam DEIS, Pg. 17
[9] Arthington (2012)

Sustainable Rivers program. Substantial expertise resides within the resource agencies, state and federal government, advocacy organizations and academic institutions within Alabama, such as Auburn University's Water Resources Center. Lastly, EPA stands ready to assist in the coordination of this review as needed.

Aquatic Life and Endangered Species

EPA understands that FERC has coordinated with the US Fish and Wildlife Service (FWS) regarding potential impacts to T&E species and any associated mitigation regarding the proposed action. EPA also understands that through these coordination efforts the FWS provided recommendations to FERC for the Martin Dam Project relicense in a letter filed April 6, 2012. The FWS provided five recommendations regarding the proposed relicense: 1) Shoreline Management Plan (SMP): In order to protect fish spawning and rearing habitat, and maintain wildlife habitat diversity, no new sea walls should be constructed unless necessary to protect land and property; 2) SMP: In order to protect the shoreline from erosion and protect sensitive resources, encourage shoreline developments to maintain a 30-foot-wide control strip within project boundary, and increase the buffer width to at least 100 feet; 3) Continue Alabama Power's support of aquatic restoration within the Mobile Basin and work with Interior and Alabama DCNR to identify suitable habitats (primarily tributaries) for species reintroductions within the Martin Dam Project boundary; 4) Consider utilizing the Tallapoosa River portion of the Alabama DROP when assessing drought operations; 5) Within the Core Management Area in the WMP, Alabama Power should manage towards a desired forest condition consistent with the "good quality foraging habitat" for the federally listed endangered red-cockaded woodpecker, a longleaf pine ecosystem. FERC adopted FWS recommendations 1, 4, 5, partially adopted 2, and did not adopt recommendation 3.

EPA Comment / Recommendation – The State of Alabama has significant aquatic biodiversity that is recognized both nationally and globally. In comments presented to ADEM in November 2012, EPA strongly supported Alabama's efforts to ensure greater stewardship of these resources.[10] *Rivers of Life*, a NatureServe report on aquatic biodiversity, highlights the state of Alabama and the Mobile River basin, in particular, as having "extraordinarily diverse assemblages of freshwater animal species...," including describing Alabama waters as a "treasure trove of botanical life".[11] However, that report notes that many of Alabama's species are vulnerable. Conservation practices and development of instream flow protections may provide the safeguards needed for many of these species that make Alabama a unique ecological treasure. EPA encouraged ADEM to acknowledge and support the exceptional aquatic biodiversity of Alabama as it works toward the completion of the statewide water management plan. EPA also supports the adoption of all of the FWS proposed recommendations for the Martin Dam Project relicense that would also protect this significant biodiversity.

Coordination with the U.S. Army Corps of Engineers (USACE)

EPA notes that in addition to the recent release of the Draft EIS for the ACT Water Control Manual (WCM) update, FERC relicensing was recently completed for several Coosa River projects and APC has requested to modify winter pool levels at the Weiss and Logan Martin Lakes.

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[10] EPA to ADEM, November 19, 2012

[11] (Master et al. 1998)

Since APC projects control 78% of the water resources in the ACT River Basin, EPA recommends that the FERC coordinate license renewals with the ACT WCM update so that basin management actions can be evaluated together via a comprehensive, public process such as EIS development. In general, EPA has concerns that the FERC relicensing actions are not in sync with the USACE WCM update However, EPA notes that the DEIS provides information regarding FERC's position requiring coordination efforts between USACE and the APC regarding flood control procedures.[12]

EPA Comment / Recommendation - In order to affectively improve these systems, there needs to be better coordination for permit reissuance. EPA notes that there is a lack of coordination of the timing for re-evaluating all of the systems in the ACT, with the dams on the Coosa and the Tallapoosa all on different schedules. In the last 15 years, EPA has found significant benefit in switching to a basin-wide approach for monitoring, assessment and permit issuance so that river basins can be addressed holistically. EPA recommends that FERC consider changing the expiration dates of FERC licenses so that in the future river systems can be evaluated at the same time, optimally for the entire ACT system, but at a minimum for the Tallapoosa dams - Yates, Thurlow and Martin- as the operations of these systems are directly related. Until such time as the license renewals can be synchronized, EPA recommends that FERC consider working with the USACE to adaptively manage these dams such that when one license is evaluated, improvements in instream flow and water quality standards can be adaptively added to those licenses that are not up for renewal.

Shoreline Management Plan

EPA supports the development of the Shoreline Management Plan (SMP) especially provisions of the plan that address shoreline Best Management Practices to control shoreline erosion and reduce sedimentation in the Lake. EPA notes that the DEIS provides a timeline for implementation of the SMP but not the specific provisions of the plan.

EPA Comment / Recommendation – EPA supports maintaining natural shoreline conditions when possible. EPA recommends that the FEIS provide a clearer description of how and when the different components of the SMP will be implemented by APC.

Drought Management and Tailrace Monitoring Plans

EPA notes that FERC is requiring APC to submit a *Drought Management Plan* and a *Tailrace Water Quality Monitoring Plan* within a certain amount of time after issuance of the license for the Martin Dam project.

EPA Comment / Recommendation - EPA request that FERC and APC coordinate with EPA Region 4 on the development of these plans. EPA Region 4 contacts for these plans are listed below:

- Lisa Perras Gordon – EPA Region 4 – Water Quality Standards
- Lydia Mayo – EPA Region 4 – Water Quality Standards

[12] p. 159 of Martin Dam DEIS – references proposed modification to Exhibit H

- Dan Holliman – EPA Region 4 – NEPA Program Office

Stakeholder Comments
EPA notes that specific comments provided to FERC during the relicensing process were not provided in the DEIS.

EPA Comment / Recommendation - EPA recommends that FERC provide all comments provided during the licensing process, scoping process, and DEIS comment period in the FEIS. In addition, responses to comments on the DEIS should be provided in a dedicated section of the FEIS.

Public Education and Outreach Program Plan
EPA notes that APC proposes to develop a *Public Education and Outreach Program Plan* to enhance the public's ability to access information regarding the *Shoreline Permitting Program.* EPA supports the public engagement activities proposed by APC, especially in the areas of education regarding BMP implementation to reduce erosion and sedimentation in Lake Martin.

Environmental Justice
Pursuant to the Executive Order 12898 entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations" and the accompanying Presidential Memorandum, EPA is unable to locate an EJ analysis in the DEIS regarding the Martin Dam Project relicense.

EPA Comment / Recommendation – While EPA understands that FERC is an independent agency, similar to the Nuclear Regulatory Commission, we recommend that the FEIS include an EJ analysis that includes descriptions of the local demographics and identifies low-income and minority populations that have the potential to be impacted by the proposed action. Should the demographic analysis identify minority and low-income populations, the FEIS should describe efforts made to meaningfully engage these populations in the decision-making process. In addition, EPA recommends the FEIS identify communities with EJ concerns that may engage in subsistence activities within the Lake Martin boundaries (i.e., subsistence fishing). FERC should also evaluate the potential for communities with EJ concerns to be impacted downstream as a result of the proposed action. A summary of EJ comments or concerns identified during the public involvement process along with agency responses to those concerns and efforts to avoid, minimize or mitigate potential impacts should also be included in the FEIS.

Children's Health
Pursuant to Executive Order 13045 on Children's Health and Safety which directs each Federal agency, to the extent permitted by law and appropriate, to make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children, and to ensure that its policies, programs, and activities, and standards address these risks. An analysis of children's health and safety issues associated with the proposed project was not located in the DEIS. However, EPA appreciates FERC including information regarding fish consumption advisories for women of child-bearing age and for small children for Thurlow reservoir and the lower Tallapoosa.

EPA Comments/Recommendations: Similar to the EJ analysis, the analysis and disclosure of potential effects of the proposed action on children should be considered because the behavioral and physiological traits of children render them more susceptible and vulnerable to environmental health and safety risks than adults. The EIS should identify demographics of children under the age of 18, including children that may use or be affected by the resource (i.e. children within the vicinity of the dam and that live downstream of the project). The potential direct, indirect and cumulative environmental and human health effects of the proposed project should be clearly described and analyzed in the FEIS. If there is a possibility for disproportionate impacts to children related to the proposed action efforts to avoid, minimize and mitigate those impacts should be documented.

Editorial Comments

- An example of flood inundation mapping is provided on p.58 of the DEIS. Since downstream flooding is a significant concern of several stakeholders, EPA recommends adding all of the flood inundation maps from this report into the EIS or attached the full report as an Appendix of the FEIS.
- Tables 3-23 thru 3-25 – EPA notes that Wet/Dry/Normal years are not defined in the text or the footnote for these tables. EPA recommends that FERC provide average annual rainfalls corresponding to these terms.
- EPA notes that FERC uses 507.6 **miles** to quantify "Unclassified" land on p. 122 and 507.6 **acres** on p. 125. This appears to be a typo.
- On p. 156 it is stated that "Based on our independent review of agency and public comments filed on this project and our review of the environmental and economic effects of the proposed project and its alternatives, we select the no-action alternative with most of Alabama Power's proposed environmental measures and staff-recommended modifications as the preferred alternative." However, EPA notes that FERC defines the "staff alternative" as the preferred alternative throughout the DEIS. EPA recommends clarification in this section in the FEIS that the staff alternative is the preferred alternative.

Summary

Based on our analysis of the above referenced proposed action, EPA rates this DEIS as **"EC-2" i.e., EPA has "Environmental Concerns and Request Additional Information"** in the Final EIS (FEIS). EPA's rating system criteria can be found online at: http://www.epa.gov/oecaerth/nepa/comments/ratings.html.

Our primary concerns associated with the proposed actions are related to maintaining downstream flows to ensure adequate water quality for support aquatic life, implementation of shoreline management plan, implementing a monitoring plan than ensures compliance with the DO water quality standard, and evaluating potential EJ and children health impacts. We request that a dedicated section of the FEIS include specific responses to our comments.

EPA appreciates the opportunity to review the DEIS. Should FERC have questions regarding our comments, please feel free to contact Dan Holliman of my staff at 404/562-9531 or holliman.daniel@epa.gov.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Office of Environmental Accountability

cc: Alabama Department of Environmental Management
US Fish and Wildlife Service